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Certificate No.: TC-5548

TEST REPORT OF PHYSICAL PROPERTIES OF CEMENT - 53 Grade

Lab ID	:	**CP-2017-12-04-14** **Date: 06-12-17**
Customer	:	Assistant Executive Engineer, Project Sub Division, BBMP, Bangalore.
Address	:	Project Sub Division, BBMP, Bangalore.
Project Name	:	Widening of Doddabommasandra Main road in Ward no.10
Agency	:	M/s Prashanth Road Infra Projects and Develpers Pvt.Ltd.
Customer's Reference	:	BBMP/BZ/EE(PR)/WO/01//2015-16
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	04-12-17
Sample ID No	:	2017-12-04-14/01
Sample Type	:	Dalmia 53grade
Reference to BIS codes	:	IS 12269 : 2013, 53 Grade Ordinary Portland cement Specification , IS 4031 (Part 1,2 3,4,5, 6,11):1988 IS 4031 Part 1 DETERMINATION OF FINENESS BY DRY SIEVING, Clause 4.4 IS 4031 Part 2, Determination of Fineness by Blaine Air Permeability Method, Clause 5 IS 4031 Part 3, Determination of Soundness, Clause 5,Clause 6 IS 4031 Part 4, Determination of Consistency of Standard Cement Paste, Clause 5 IS 4031 Part 5, Determination of Initial & Final Setting Time, Clause 5 IS 4031 Part 11,DETERMINATION OF DENSITY , Clause 6
Date of test	:	05-12-17

Sl.No.	Physical properties	Results	Requirement as per IS 12269: 2013
1	Fineness by dry sieving (%)	2.78	–
2	Finess by Air permeablity method (m^2/kg, Min)	291.4	225m^2/kg, Min
3	Density (gm/cc)	3.13	–
4	Standard Consistency (%)	28.5%	Not specified
5	Initial Setting time	195 minutes	Not less than 30 minutes
6	Final Setting time	270 minutes	Not more than 600 minutes
7	Soundness (Le Chatelier's Method)	1.5mm	Not more than 10 mm

Note:

The results pertain to the samples received and tested.

All information furnished by Customer/Representative

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Project Division
Yelahanka Zone
Bangalore

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R KARTHIK RECHAN
Authorized Signatory
Quality Manager

****End of Report****

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TEST REPORT OF PHYSICAL PROPERTIES OF CEMENT - 53 Grade

Lab ID	:	**CP-2017-12-04-14** **Date: 02-01-18**
Customer	:	Assistant Executive Engineer, Project Sub Division, BBMP, Bangalore.
Address	:	Project Sub Division, BBMP, Bangalore.
Project Name	:	Widening of Doddabommasandra Main road in Ward no.10
Agency	:	M/s Prashanth Road Infra Projects and Develpers Pvt.Ltd.
Customer's Reference	:	BBMP/BZ/EE(PR)/WO/01//2015-16
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	04-12-17
Sample ID No	:	2017-12-04-14/01
Sample Type	:	Dalmia 53grade
Reference to BIS codes	:	IS 12269 : 2013, 53 Grade Ordinary Portland cement Specification , IS 4031 Part 4, Determination of Consistency of Standard Cement Paste, Clause 5 IS 4031 Part 6, Determination of Compressive Strength, Clause 6
Date of test	:	05-12-17

Compressive Strength			
Sl.No.	**Physical properties**	**Results**	**Requirement as per IS 12269: 2013**
1	3 Days	28.5N/mm^2	Not less than 27 N/mm^2
2	7 Days	39.0N/mm^2	Not less than 37 N/mm^2
3	28 Days	56.5N/mm^2	Not less than 53 N/mm^2

Note:

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TEST REPORT ON COARSE AGGREGATES

Lab ID	:	**CP-2017-12-04-14** **Date: 07-12-17**
Customer	:	Assistant Executive Engineer, Project Sub Division, BBMP, Bangalore.
Address	:	Project Sub Division, BBMP, Bangalore.
Project Name	:	Widening of Doddabommasandra Main road in Ward no.10
Agency	:	M/s Prashanth Road Infra Projects and Develpers Pvt.Ltd.
Customer's Reference	:	BBMP/BZ/EE(PR)/WO/01//2015-16
Source of Sample	:	Sample supplied by Agency
Sample condition	:	Satisfactory
Date of Receipt	:	04-12-17
Sample ID No	:	2017-12-04-14/02(a)
Sample Type	:	40mm down size coarse aggregate
Reference to BIS codes	:	IS: 383:2016 (Specification for Coarse and fine Aggregates) IS: 2386 :1963(Part - 1,3,4) RA2011 IS 2386 Part 1: Particle Size and Shape IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption IS 2386 Part 4: Mechanical Properties
Date of test	:	04-12-17

SIEVE ANALYSIS (PARTICLE SIZE DISTRIBUTION) OF 40MM DOWN COARSE AGGREGATE:

Total weight taken : 15000 grams

Sample No.	Sieve No.	Weight Retained in gms	Cumulative Weight Retained in gms	% Cumulative Weight Retained	% Passing	Required as per IS 383:2016
1	80 mm	0	0	0.0	100	100
2	40 mm	714	714	4.8	95.2	90-100
3	20 mm	6785	7499	50.0	50.0	30-70
4	10 mm	4514	12013	80.1	19.9	10-35
5	4.75 mm	2585	14598	97.3	2.7	0-5
6	Pan	402	15000	100.0	0	---

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TEST REPORT ON COARSE AGGREGATES

Lab ID : **CP-2017-12-04-14** **Date: 07-12-17**

Sample ID No : 2017-12-04-14/02(a)

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS:383-2016
1	Flakiness Index(%)	**13.5**	Combined Flakiness & Elongation Index Shall not Exceed 40% for Uncrushed & Crushed Aggregate
2	Elongation Index(%)	**11.8**	
3	Specific Gravity	**2.61**	_
4	Bulk Density(Loose) (Kg/l)	**1.54**	_
5	Bulk Density(Compacted) (Kg/l)	**1.59**	_
6	Water Absorption(%)	**0.28**	_

Note:

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Bangalore

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Quality Manager

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TEST REPORT ON COARSE AGGREGATES

Lab ID	:	**CP-2017-12-04-14** **Date: 07-12-17**
Customer	:	Assistant Executive Engineer, Project Sub Division, BBMP, Bangalore.
Address	:	Project Sub Division, BBMP, Bangalore.
Project Name	:	Widening of Doddabommasandra Main road in Ward no.10
Agency	:	M/s Prashanth Road Infra Projects and Develpers Pvt.Ltd.
Customer Reference	:	BBMP/BZ/EE(PR)/WO/01//2015-16
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	04-12-17
Sample ID No	:	2017-12-04-14/02(b)
Sample Type/ Size	:	20mm down size coarse aggregate
Reference to BIS codes	:	IS: 383:2016 (Specification for Coarse and fine Aggregates) IS: 2386 :1963(Part - 1,3,4) RA2011 IS 2386 Part 1: Particle Size and Shape IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption IS 2386 Part 4: Mechanical Properties
Date of test	:	04-12-17

SIEVE ANALYSIS (PARTICLE SIZE DISTRIBUTION) OF 20MM DOWN COARSE AGGREGATE:

Total weight taken : 5000 grams

Sample No.	Sieve No.	Weight Retained in gms	Cumulative Weight Retained in gms	% Cumulative Weight Retained	% Passing	Required as per IS 383:2016
1	40 mm	0	0	0	100	100
2	20 mm	285	285	5.7	94.3	90-100
3	10 mm	2485	2770	55.4	44.6	25-55
4	4.75 mm	2074	4844	96.9	3.1	0-10
5	Pan	156	5000	100	0	–

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TEST REPORT ON COARSE AGGREGATES

Lab ID : **CP-2017-12-04-14** **Date: 07-12-17**

Sample ID No : 2017-12-04-14/02(b)

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS:383-2016
1	Flakiness Index(%)	**11.4**	Combined Flakiness & Elongation Index Shall not Exceed 40% for Uncrushed & Crushed Aggregate
2	Elongation Index(%)	**10.7**	
3	Specific Gravity	**2.62**	–
4	Bulk Density(Loose) (Kg/l)	**1.50**	–
5	Bulk Density(Compacted) (Kg/l)	**1.54**	–
6	Water Absorption(%)	**0.31**	–
7	Aggregate crushing Value(%)	**23.4**	Max 30% for Aggregates to be used in concrete for wearing Surface, In case Aggregate Crushing Value Exceeds 30% then the test for ten percent fines should be conducted for Aggregates to be used in concrete other than for wearing Surface.
8	Aggregate Impact Value(%)	**22.1**	30% for Aggregates to be used in concrete for wearing Surface, 45% for Aggregates to be used in concrete other than for wearing Surface.

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Authorized Signature
Quality Manager

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TEST REPORT OF FINE AGGREGATE

Lab ID	:	**CP-2017-12-04-14** **Date: 07-12-17**
Customer	:	Assistant Executive Engineer, Project Sub Division, BBMP, Bangalore.
Address	:	Project Sub Division, BBMP, Bangalore.
Project Name	:	Widening of Doddabommasandra Main road in Ward no.10
Agency	:	M/s Prashanth Road Infra Projects and Develpers Pvt.Ltd.
Customer's Reference	:	BBMP/BZ/EE(PR)/WO/01//2015-16
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	04-12-17
Sample ID No	:	2017-12-04-14/03
Sample Type	:	Fine Aggregate
Reference to BIS codes	:	IS 383 : 2016 (Specification for Coarse and fine Aggregates) IS: 2386 :1963(Part - 1, 3) RA2012 IS 2386 Part 1: Particle Size and Shape IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption
Date of test	:	04-12-17
Total weight taken	:	1000 grams

Sl.no	Sieve Size	Weight Retained (gms)	Cumulative Weight Retained (gms)	% Cumulative Weight Retained	% Passing	Requirement as per IS 383:2016			
						Grading Zone I	Grading Zone II	Grading Zone III	Grading Zone IV
1	10 mm	0	0	0.0	100.0	100	100	100	100
2	4.75 mm	21	21	2.1	97.9	90-100	90-100	90-100	95-100
3	2.36 mm	174	195	19.5	80.5	60-95	75-100	85-100	95-100
4	1.18 mm	214	409	40.9	59.1	30-70	55-90	75-100	90-100
5	600 micron	224	633	63.3	36.7	15-34	35-59	60-79	80-100
6	300 micron	178	811	81.1	18.9	5-20	8-30	12-40	15-50
7	150 micron	124	935	93.5	6.5	0-10	0-10	0-10	0-15
8	Pan	65	1000	100.0	0.0	---	---	---	---

Result :The tested Sample Conforms to Grading Zone II

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TEST REPORT OF FINE AGGREGATE

Lab ID : **CP-2017-12-04-14** **Date: 07-12-17**

Sample ID No : 2017-12-04-14/03

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS 383:2016
1	Water Absorption(%)	2.14	–
2	Specific Gravity	2.54	–
3	Material finer than 75 micron(%)	5.9	Uncrushed fine Aggregate Max 3%, Crushed Fine aggregate Max 15%, Mixed Fine aggregate Max 12%, Manufactured Fine aggregate Max 10%

Note:
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Bangalore

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Quality Manager

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TEST RESULTS OF STEEL

Lab ID	:	**CP-2017-12-04-14**
Customer	:	Assistant Executive Engineer, Project Sub Division, BBMP, Bangalore.
Address	:	Project Sub Division, BBMP, Bangalore.
Project Name	:	Widening of Doddabommasandra Main road in Ward no.10
Agency	:	M/s Prashanth Road Infra Projects and Develpers Pvt.Ltd.
Customer's Reference	:	BBMP/BZ/EE(PR)/WO/01//2015-16
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	04-12-17
Sample ID No	:	2017-12-04-14/04
Sample Type	:	JSW
Reference to BIS codes	:	IS 1786-2008, IS:1608-2005(RA 2011), IS 1599-2012.
Date of test:	:	05-12-17

Date: 06-12-17

Sl.No	Identification of sample	Grade of the sample	Diameter of the steel bar	Weight of the sample	Yield stress	Tensile strength	Elongation	Bend test	Rebend test
			(mm)	(kg/m)	(N/mm2)	(N/mm2)	(%)		
1	JSW	Fe500	8	0.392	542	672	20.0%	Satisfactory	Satisfactory
2	JSW	Fe500	10	0.615	568	685	20.0%	Satisfactory	Satisfactory
3	JSW	Fe500	12	0.887	585	692	19.0%	Satisfactory	Satisfactory

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TEST REPORT OF CEMENT CONCRETE KERB STONE

Lab ID	:	**CP-2017-12-18-03**
Customer	:	Assistant Executive Engineer, Project Sub Division, BBMP, Bangalore.
Address	:	Project Sub Division, BBMP, Bangalore.
Project Name	:	Widening of Doddabommasandra Main road in Ward no.10
Agency	:	M/s Prashanth Road Infra Projects and Develpers Pvt.Ltd.
Customer's Reference	:	BBMP/BZ/EE(PR)/WO/01//2015-16
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	18-12-17
Sample ID No	:	2017-12-18-03/01
Sample Type /Size	:	CC Kerb Stone/ 450*165*400mm
Reference to BIS codes	:	IS: 516 - 1959 Methods of Tests for Strength of Concrete
Date of test	:	18-12-17

Date: 22-12-17

Sl. No.	Identification Mark	Diameter of the core	Height of the core	Weight of the core	Area	Failure Load	Core Compressive strength	Corrected Cylinder Compressive strength	Equivalent Cube Compressive strength
		(mm)	(mm)	Kg	(Sq.mm)	(KN)	(N/mm2)	(N/mm2)	(N/mm2)
1	A	100.01	165.51	2.864	7854	142.1	18.1	18.1	22.6
2	B	100.03	165.49	8.793	7857	145.2	18.5	18.5	23.1
3	C	100.01	165.50	8.815	7854	145.1	18.5	18.5	23.1

Note:
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TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : **CP-2017-12-15-02** **Date: 18/12/2017**

Customer : Assistant Executive Engineer, Project Sub Division, BBMP, Bangalore.

Address : Project Sub Division, BBMP, Bangalore.

Project Name : Widening of Doddabommasandra Main road in Ward no.10

Agency : M/s Prashanth Road Infra Projects and Develpers Pvt.Ltd.

Customer's Reference : BBMP/BZ/EE(PR)/WO/01//2015-16

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 15-12-17

Sample ID No : 2017-12-15-02/01

Customer ID : Cement Concrete

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M20 / 7 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

Date of test : 18/12/2017

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	Cement Concrete	M20	11/12/2017	18/12/2017	150.47 X 150.19 X 150.66	22599	8.174	395.5	17.5	18.0
2	Cement Concrete	M20	11/12/2017	18/12/2017	150.47 X 149.74 X 150.66	22531	8.162	403.3	17.9	
3	Cement Concrete	M20	11/12/2017	18/12/2017	150.47 X 150.44 X 150.47	22637	8.144	418.8	18.5	

Note:

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Certificate No.: TC-5548

TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : **CP-2017-12-15-02** **Date: 08/01/2018**

Customer : Assistant Executive Engineer, Project Sub Division, BBMP, Bangalore.

Address : Project Sub Division, BBMP, Bangalore.

Project Name : Widening of Doddabommasandra Main road in Ward no.10

Agency : M/s Prashanth Road Infra Projects and Develpers Pvt.Ltd.

Customer's Reference : BBMP/BZ/EE(PR)/WO/01//2015-16

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 15-12-17

Sample ID No : 2017-12-15-02/02

Customer ID : Cement Concrete

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M20 / 28 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

Date of test : 08/01/2018

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	Cement Concrete	M20	11/12/2017	08/01/2018	150.47 X 150.33 X 149.58	22620	8.145	477.3	21.1	21.1
2	Cement Concrete	M20	11/12/2017	08/01/2018	151.21 X 150.66 X 149.87	22781	8.198	473.9	20.8	
3	Cement Concrete	M20	11/12/2017	08/01/2018	150.66 X 149.78 X 150.66	22566	8.169	482.9	21.4	

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